Shoulder Dystocia: Legal Update

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Case Example

- Gravida 1, Para 0
- Pregravid 5’7” 315 lbs., BMI 49.3
- 34 week U/S EFW > 95th tile.(2818 grams)
- 35 pound weight gain
- Maternal weight at delivery 350 lbs.
- No gestational diabetes
Case Example

- Presents 39 2/7 weeks for induction for macrosomia. (1/50%/-4)
- Active phase 3 hours.
- Second stage 29 minutes.
Delivery Note

• that “upon delivery of head a shoulder dystocia was resolved in <1 min after McRoberts and Suprapubic pressure were used to deliver the R. ant. Shoulder…Baby’s right arm ↓ activity @ end.”

• Apgars 8 and 8
Issues?

- Is fetal macrosomia appropriate fetal indication for an induction?
ACOG 173 (2016)

- Macrosomia (Risk Factors)
  - Increased Risk For C-Section
  - Postpartum Hemorrhage
  - Vaginal Lacerations
  - Associated with Shoulder Dystocia
  - Brachial Plexus palsy 2.6% and 7%, overall risk in USA is 1.5% of all vaginal deliveries.
ACOG 173

- Ultrasound is a poor predictor of estimating fetal weight over 4500 grams.
- Only 50% of babies weighing over 4500 grams only 10% will weigh within the ultrasound EFW.
- Baby would have to weigh 4800 grams to be able to estimate >50% macrosomia.
ACOG 173 (Role of C-Section)

- If EFW greater than 4500 or 5000 grams then C-section?
  - Prophylactic C-section may be considered.
  - Planned C-section for suspected macrosomia “is controversial.”
  - Not confirmed as beneficial by any randomized trials.
ACOG 173 (Role of Induction)

• “Suspected fetal macrosomia is not an indication for induction…because induction does not improve fetal or maternal outcomes.”

• However, meta analysis of 4 trials found decrease in shoulder dystocia rate from inductions v expectant management.

• No difference in Brachial plexus palsies
ACOG 173 Conclusions

• Whether intervention is better than expectant management for suspected large-for-gestational-age infants remains unclear.

• At this time ACOG continues to recommend against induction of labor for a suspected large-for-gestational-age infant at any gestational age.
LA LA Land
Informed Consent

• “discussed with patient risks of induction v c-section, including increased risk of c-section with induction. Patient wants induction…the cervix and bony pelvis are impediments.”

• No mention of shoulder dystocia.
Case Example

- If patient consents to induction for macrosomia, does standard of care require informed consent discussion regarding increased risk of shoulder dystocia/brachial plexus palsy?
Let’s do the Math

- 2818 grams at 34 weeks gestation
- Fetal growth = 230 grams per week
- 230 grams per week times 5 weeks = 1150 grams
- 2818 grams plus 1150 grams = 3968 grams
At Delivery

- Baby’s Weight 4315 grams
- Macrosomia 5000 grams
- No macrosomia, EFW also less than 5000 grams!
An Answer

- Shoulder dystocia was unpredictable
- C-section was not indicated
- Expectant management or induction would have resulted in shoulder dystocia
- Was physician negligent in delivery causing brachial plexus injury?
Shoulder Dystocia

ACOG 2017 v ACOG 2002
ACOG Authors

• November 2002, Number 40 (Detroit)
  – Dr. Sean Blackwell
  – Dr. Robert Sokol

• May 2017, Number 178 (So Cal)
  – Dr. Robert Gherman
  – Dr. Joseph Ouzounian
• Reported incidence .2% to 3% vag delivery
• 80% complete recovery (64% by 6 months)
• .08% HIE non diabetic mothers
• 1% HIE diabetic mothers.
• HIE (head to body delivery 10.75 minutes)
ACOG 178

- Shoulder Dystocia CANNOT be accurately predicted or prevented.
- Increased birth weight and maternal diabetes=association only.
- Most cases of SD occur in nondiabetic women with normal sized infants.
Poor Predictors ACOG 178

- Excessive Weight Gain
- Operative Vaginal Delivery
- Oxytocin Use
- Multiparity
- Epidural Use
- Precipitous Labor
- Prolonged Second Stage
Poor Predictors ACOG 178

- Ultrasound derived fetal abdominal diameter-biparietal diameter difference, not clinically useful.
Macrosomia

- Induction due to Macrosomia
- Increases risk of C-Section but not reducing risk of shoulder dystocia or morbidity.
- No inductions per ACOG prior to 39 weeks, without indication.
- UNCLEAR if induction v. expectant management for LGA infants.
ACOG 178

- “At this time, ACOG continues to discourage induction of labor solely for suspected macrosomia at any gestational age”
- C-Section for macrosomia?
- “Should be considered women without diabetes EFW of at least 5000 g and diabetic women EFW of 4500 g.”
Plaintiff’s experts: The Injury Itself is Sufficient?

Q: How do you know that there was excessive traction in this case?
A: Because the baby has a brachial plexus injury.
The Injury Itself is Sufficient?

Q: Would you agree that a brachial plexus palsy from a shoulder dystocia can result without malpractice being committed by the attending physician or resident?
A: No

Q: So every time there is a brachial plexus palsy it is due to the negligence or malpractice of the physician who is delivering the baby?
A: Are you talking about permanent or transient or any kind?

Q: Permanent
A: Yes
Plaintiff Must Prove

- Liability
- Proximate Cause
- Damages
Liability

- What evidence exists?
- Documentation
- Communication
ACOG 178

• “The presence of brachial plexus injury IS NOT evidence that shoulder dystocia has occurred.”
• NOT all brachial plexus injuries are related to shoulder dystocia.
• Injuries are multifactorial in nature.
• SEVERE injuries have been documented without SD and without risk factors.
Task Force

- Ouzounian
- Gherman
- Chauhan
- Gonik
- Clark
- Goldsmith, neo
- Yang, Neurosurgeon
- Michele Grimm, Biomedical Engineer
NBPP Risk Factor - Conclusions

• Shoulder dystocia (SD) is the ONLY statistically significant and clinically useful predictor for the occurrence of neonatal brachial plexus palsy (NBPP)

• Greater than 80% NBPP cases occur in women without known risk factors

• No intervention has been identified that will prevent all or most cases of NBPP or clinically apparent SD
NBPP
Three Clinical Situations

• Suspected fetal macrosomia with EFW >5000 g in nondiabetic women, 4500 g in diabetic women
• Prior recognized SD, especially with severe BP injury
• Mid-pelvic operative vaginal delivery with fetal birthweight >4000 g
Labor and Delivery Summary Form #57

NEWBORN RECORD COPY

Date: 5/3/19

Laboratory Results:

- Oxygen saturation: 100%
- Spontaneous breathing
- Head out - should
gestation = could not
rotate a clarity
shoulder = hand pushed
5/4 june
Venous lead +? late d
24/5 OK x2

Remarks:

- Spontaneous breathing
- Head out
- Shoulder could not rotate
- Venous lead? late
- 24/5 OK x2
### LABOR AND DELIVERY SUMMARY FORM #5712

#### MATERNAL RECORD COPY

<table>
<thead>
<tr>
<th>Time</th>
<th>Medication</th>
<th>Pos</th>
<th>Route</th>
<th>Site</th>
<th>Inf</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**Neonatal Medications**

- **None**

**Lab Data**

- **None**

**Blood Gases**

- **pH**
- **pO₂**
- **pCO₂**
- **HCO₃⁻**

**Test**

- **Dextrostix**

**Remarks**

- OP – on spontaneous outlet
  - head out - shoulder
dystocia - could not
  - rotate or delivery
  - Should: linear forceps

5/4 punc. (me Roberts unsure)

- Vaginal dead +? Injured
- AN's OK X²

**Date Completed**

5/23/57
ACOG 178

• Regardless of maneuvers “maternal and infant complications are unpredictable and may NOT be avoidable.”
How to manage shoulder dystocia?

- ACOG?
Management Guidelines ACOG 178

• Communication is essential.
• Note time at which SD was encountered.
• Request help, nursing, anesthesia, OB
• Instruct patient NOT to push “while maneuvers are employed.”
ACOG 178 Manuevers

- ALL maneuvers can increase stretch of BP.
- McRoberts first.
- Suprapubic pressure anytime.
- Never fundal pressure.
- If McRoberts and Suprapubic unsuccessful....
ACOG 178 Manuevers

- Delivery of posterior arm can be considered...uses the "least amount of force to effect delivery."
- 95% of SDs will be relieved with these maneuvers within 4 minutes.
ACOG 178 Rotational Maneuvers

- Rubins
- Woods Screw
- Posterior Axilla Sling traction
- Gaskin

- If they fail they should be repeated.
Traction

• If traction is applied = axial traction in alignment with fetal cervico-thoracic spine with a downward component typically along a vector 25-45 degrees below horizontal plane.

• Lateral traction ONLY should not be employed as the sole maneuver.
Episiotomy

• Little scientific evidence to support use.
• Reserved for cases in which additional access is needed for maneuvers.
Patient Safety Checklist

DOCUMENTING SHOULDER DYSTOCA

Date _______________ Patient ___________________________ Date of birth ___________ MR # ________________
Physician or certified nurse-midwife ____________________ Gravidity/Parity ________________

Timing:
Onset of active labor ___________ Start of second stage ______
Delivery of head ___________ Time shoulder dystocia recognized and help called ______
Delivery of posterior shoulder ___________ Delivery of infant ______

Antepartum documentation:
☐ Assessment of pelvis
☐ History of prior cesarean delivery: Indication for cesarean delivery: ___________________________
☐ History of prior shoulder dystocia
☐ Largest prior newborn birth weight ______
☐ Cesarean delivery offered if estimated fetal weight greater than 4,500 g (if the patient has diabetes mellitus)
☐ History of gestational diabetes
☐ Estimated fetal weight ______

Intrapartum documentation:
☐ Mode of delivery of vertex:
☐ Spontaneous
☐ Operative delivery: Indication: ___________________________
☐ Vacuum
☐ Forceps
☐ Anterior shoulder:
☐ Right
☐ Left
☐ Traction on vertex:
☐ None
☐ Standard
☐ No fundal pressure applied
☐ Maneuvers utilized (1):
☐ Suprapubic pressure (stand on the side of the occiput)
☐ Hip flexion (McRoberts maneuver)
☐ All fours (Gaskin maneuver)
☐ Delivery of posterior arm
☐ Anterior scapula (Rubin maneuver)
☐ Posterior scapula (Woods maneuver)
☐ Zavaglione maneuver
☐ Abdominal delivery
☐ Episiotomy:
☐ None
☐ Median
☐ Mediolateral
☐ Proctoepisiotomy
☐ Extension of episiotomy:
☐ None
☐ Third degree
☐ Fourth degree
☐ Laceration:
☐ Third degree
☐ Fourth degree
☐ Cord blood gases sent to the laboratory:
☐ Yes: Results: ___________________________
☐ No

(continued)
(continued)

- Status of neonate prior to leaving delivery room or operating room:
  - Apgar scores
  - Evidence of injury
  - Birth weight (if available)
- Staff present
- Family members present
- Patient and family counseled
- Debriefing with appropriate personnel

Postpartum/neonatal documentation:
- Delivery discussed with family
- Monitored for postpartum hemorrhage:
  - Yes: Results
  - No
- Communication with pediatrics department if there is evidence of injury or asphyxia
- Coordination of follow-up care for mother and baby
- Monitored for postpartum depression:
  - Yes: Results
  - No

Procedural Elements for Shoulder Dystocia
The following steps should be taken when managing shoulder dystocia:
1. Call for help from pediatrics, anesthesia, and neonatal intensive care unit staff, and assign a timekeeper
2. Initiate maneuver (e.g., McRoberts maneuver)
3. Re-evaluate course of actions, including using other maneuvers or repeating maneuvers if unsuccessful
4. Consider abdominal delivery
5. Document event—move to documentation checklist

Reference

Standardization of health care processes and reduced variation has been shown to improve outcomes and quality of care. The American College of Obstetricians and Gynecologists has developed a series of Patient Safety Checklists to help facilitate the standardization process. This checklist reflects emerging clinical, scientific and patient safety advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed. Although the components of a particular checklist may be adapted to local resources, standardization of checklists within an institution is strongly encouraged.

How to Use This Checklist
The Patient Safety Checklist on Documenting Shoulder Dystocia should be used to guide the documentation process if a patient has experienced shoulder dystocia.

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Antepartum Documentation

- Assessment of pelvis
- History of prior SD
- Largest prior newborn weight
- History of gestational diabetes
- EFW!
- C/S if EFW > 4500 g (diabetic)
- C/S if EFW > 5000 g (non-diabetic)
Intrapartum Documentation

- Mode=spontaneous, vacuum, forceps (with indication)
- Anterior shoulder
- Traction on vertex (none or “standard”)
- No fundal pressure check box
- Maneuvers
- Episiotomy
- Laceration
Neonate

- Cord blood gases.
- Apgars, Weight, Evidence of Injury
- Staff present
- Family present
Elements of Proper Documentation

- List of all personnel present. The Team, The Team, The Team
- Type of delivery
  - Indication for instrumentation
  - Station and position of the head if instrumented
- Which shoulder was anterior
- Episiotomy and type
- Maneuvers performed and sequence
- Time elapsed from delivery of head to body
- Cord gases
- Either dictate or use form
- No fundal pressure
- Gentle downward traction/guided babies head out or no traction (What really happened!)
WHY?

Mode: 0 Vacuum Assisted (Vacuum + 2 + Cephalic + Spinal)

Indication:
1. 2nd Stage 72 Hours
2. Maternal Exhaustration
3. Severe Severe Shoulder Dysplasia

Assisted vaginal delivery in McRoberts, manual to MLE + 30 degree extension.

In view of extremely difficult vaginal delivery, unable to extract with forceps at delivery of baby's head. Baby hand over to Pediatrician immediately.

Slight meconium noted before the vocal cord suctioned by the pediatrician.

Outcome: LB67 at 4.10 a.m. on 19-03-05. Appears 5/75

Baby transferred to NICU - intubated
Contemporaneous Documentation

• “Contemporaneous documentation of the management of shoulder dystocia is recommended to record significant facts, findings, and observations about the shoulder dystocia event and its sequelae.” ACOG 178
Proximate Cause

• Shoulder Dystocia
  – Evidenced Based Medicine?
ACOG’s Neonatal Brachial Plexus Palsy Monograph (2014)

- There are 2 major components to the forces of the labor and delivery process: 1.) compression (pushing force) and 2.) traction (pulling force)

- Endogenous forces (maternal expulsive forces, i.e., pushing force)

- Exogenous forces (clinician-applied, i.e., pulling force)
Endogenous Forces

• Two components: Compression and Traction

• 1. Uterine contractions compress the fetus to move down the birth canal.
• 2. Traction at the time of impaction behind symphysis pubis while fetal head and neck extend.
Endogenous Forces

- Maternal expulsive forces can result from an increase in intrauterine pressure

- During labor, the fetus’ shoulders must pass at least 2 bony structures that can impede forward motion: 1.) the sacral promontory in the posterior aspect of the birth canal; and 2.) the symphysis pubis on the anterior side
Transient v Permanent

• Endogenous forces accepted as cause of transient
• Permanent BPP
  – Gherman 1999. Gray Journal. Retro-
  – Poor documentation?
NBPP

• “No published clinical or experimental data exist to support the contention that the presence of persistent (as compared to transient) NBPP implies the application of excessive force by the birth attendant.”
DEFENSE: Agreement Medical Emergency

HOW?

- Cord compression
- Chest compression
- Placental separation
SHOULDER DYSTOCIA

DANGERS INCLUDE:

- Entrapment of cord
- Inability of child’s chest to expand properly
- Severe brain damage or death if child is not delivered within minutes
Brain Damage Timing

- Ouzounian, Gray Journal 1998; Leung, BJOB 2011; Lerner, Green Journal 2011:
  - Within 2 to 7 minutes of head to body delivery interval result in permanent brain damage
Brain Damage/Death

- The longer without adequate blood flow/oxygen the increased risk of irreversible BRAIN DAMAGE/DEATH
  - 4 Minutes
  - 5 Minutes
  - 6 Minutes
  - 7 Minutes
Deliverage Note

Mode: O Vacuum Assisted Concept + 2 + Cephalic + Dehiscence

Indication:
1. 2nd Stage, 7.2 Hours
2. Maternal Exhaustion
3. Severe Shoulder Dystocia
4. Assisted vaginal delivery in Meckel's

In view of extremely difficult vaginal delivery, unable to extract with forceps at delivery of baby's head. Baby hand over to pediatrician immediately. Slight meconium noted below the vocal cord. Questioned by the pediatrician.

Outcome: LBO 7 at 4:10 AM, 28 weeks. Appears 5.75 lbs. Baby transferred to NICU, intubated.
Traction

THAT WHICH WAS REASONABLE AND NECESSARY TO DELIVER THE FETUS

• Best person equipped to analyze and describe the situation is the delivery personnel.
• Charting..........................
THANK YOU!!

Attack each day with an enthusiasm unknown to mankind.

— Jim Harbaugh —